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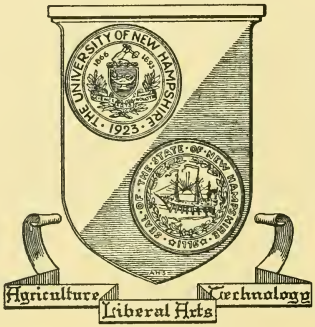

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Expansion Opportunities

for the

New Hampshire Poultry Meat Industry

I. The Competitive Position of the Industry

By

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Conclusions

In the sale of dressed poultry, an examination of New Hampshire's relationship to its competitors indicates an advantage on the Boston market which has not been exploited.

The state is more favorably situated with regard to feed prices and transportation charges than Pennsylvania, Delaware, Maryland, and the far western states, all of which ship to Boston. The greatest competition is possible from the Middle West by shipments of dressed poultry, but an expansion of the commercial poultry industry in these grain-growing states is governed by the profits from alternative production, such as beef, hogs, or cash crops.

Given this advantage, an expansion of the poultry meat industry in New Hampshire by large and small growers is based on firm ground and resolves into problems of management, quality maintenance, and marketing practices.

Expansion Opportunities
for the
New Hampshire Poultry Meat Industry

1. The Competitive Position of the Industry

by

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and

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Keen competition in the poultry industry in the United States necessitates a continuous assessment of the current situation and examination of potential opportunities for expansion or change.

It is the purpose of this first study in a series to examine broadly some basic factors of the New Hampshire poultry meat industry in relation to its competitors. The analysis is oriented to the Boston market because of its size, location, and potentialities for an expanded use of New Hampshire poultry meat.

With this objective, the more important competitive factors will be discussed in the following order: baby chick prices, farm wage rates, housing costs, prices at the farm, transportation rates, and feed prices. Consideration of these economic factors will provide a background for further discussion of production and marketing problems as they exist and as they are likely to exist in the future, with the aim of providing guides and improving information on the poultry meat industry of New Hampshire.

Poultry Meat Production in New Hampshire

At one time New Hampshire poultry men were among the largest producers of winter broilers in the country. The majority of the broilers produced from 1919 to 1923 were shipped live to the New York market where extraordinarily high prices were paid for them during the winter months. This era was started with the discovery of vitamin "D" in fish oil which made possible the rearing of broilers in confinement during the winter months.

The sale of broilers now accounts for about 12 percent of the total receipts from the poultry industry in the state. The sale of fowl accounts for 18 percent, which means that approximately 30 percent of total receipts is from poultry meat. The remainder of the income is from market

*This study is based on a thesis by William H. Wallace presented in partial fulfillment of the M.S. degree in Agricultural Economics from the University of New Hampshire.

and hatching eggs, amounting to 54 percent, and baby chicks amounting to 16 percent of total poultry income.

In 1949, $18,250,000 was received from the sale of eggs, not counting the money paid to hatching egg producers in the form of premiums. Poultry meat, both fowl and broilers, netted a return of $9,641,000 in 1949, or a total of $27,891,000. In addition, returns for baby chicks totalled approximately $6,000,000.

Table 1. Gross Income of New Hampshire Poultry Industry by Categories and Percentages, 1944-49

Year	Meat		Eggs		Broilers		Chicks	
	Gross Income $1000	% of Total	Gross Income $1000	% of Total	Gross Income $1000	% of Total	Gross Income $1000	% of Total
1944	4437	21	12512	58	1123	5	3356	16
1945	5276	20	14123	55	1535	6	4913	18
1946	6493	23	14679	53	2519	9	4224	15
1947	6347	20	19344	60	2175	7	4406	13
1948	6649	19	19094	53	4068	11	5916	17
1949	6055	17	19300	53	3912	11	7446	19
1950*	8376	23	17098	48	4983	14	5270	15

*Preliminary

The poultry industry in New Hampshire increased at a slow but steady rate from 1880 until 1940. At the outbreak of World War II expansion became very rapid with an increase from 2,700,000 birds in 1940 to 4,213,000 birds in 1943. From this peak the number has steadily declined to 2,664,000 layers in 1950.

Markets for Poultry Meat

The size of the income from fowl is sufficient justification for an examination of this market as well as that for broilers. In general the majority of birds reaching the market from farms are either old birds being replaced by pullets during the summer or early fall months, or cull birds from the laying flocks. When the old birds are dumped on the market at the same time every year, the price is forced down. Cull birds are usually in poor physical condition and most poultry men do not try to improve their appearance before selling them, which again leads to a lower price for the birds than the poultryman might receive if a little effort were used to improve the birds' appearance. The largest consuming center for New Hampshire is Boston which is capable of absorbing all the poultry meat currently produced in northern New England.

Table 2. Receipts of Live Poultry on the Boston Market by Origin, 1949*

Origin	Pounds
Connecticut	26,825
Maine	1,153,980
Massachusetts	3,608,278
New Hampshire	2,093,850
New York	350
Rhode Island	27,260
Vermont	49,345
Canada	14,500
Total	6,974,388
Total 1948	8,454,614

*Compiled from information supplied voluntarily by railroads and by principal wholesalers, jobbers, chain store companies, and other first hand receivers (truck receipts). These figures indicate intermarket shipment. Source — *Dairy and Poultry Market Statistics*, Production and Marketing Administration (P.M.A.), 1919.

The shipping of live poultry is limited to areas close to the Boston

market due to both the shrinkage in weight of live birds, and the higher cost of transportation.

In 1949, Boston bought 6,974,388 pounds of live poultry which is 10.7 percent of the total poultry meat receipts in that market. New Hampshire contributed 2,093,850 pounds or 30 percent of these receipts. In the same year producers from this state shipped 8,086,715 pounds of dressed poultry, making a total of 14.4 percent of all poultry meat received in Boston.

In addition, New Hampshire shipped 1,372,255 pounds of dressed poultry to New York. Secondary markets such as Manchester and Concord, N. H., and Haverhill and Lawrence, Mass., provided outlets for dressing plants or direct sales by producers from the state.

Comparative Advantages of Regions Competing on the Boston Market

Technological Developments in New Hampshire

New Hampshire's place in the poultry industry was initiated a number of years ago with the development of the dual purpose New Hampshire breed. This is a heavy bird, fast growing and feathering, with high hatchability, making the bird ideal for the highly developed hatching egg and baby chicks industry in the state. The high hatchability of the fertile eggs is one of the most important aspects of the breed. While the egg producing capabilities of the New Hampshire breed are not phenomenal, they are high enough to encourage their use on farms which produce market eggs alone, and the production level has risen through the years. Along with the development of the New Hampshire breed, the Barred Rock cross was introduced which gave broiler producers a fast growing broiler bird. The Barred Rock cross results from matings of Barred Plymouth Rock males on New Hampshire females. The hybird result gives a very superior broiler bird.

Table 3. Annual Egg Production in New Hampshire*

Year	Total Eggs Produced (millions)	Number Eggs Produced per layer	Percent Production
1925	133	112	31
1930	119	117	32
1935	156	141	39
1940	245	145	40
1945	399	161	44
1950†	414	161	53

*For all breeds, but 8 percent of birds over six months are New Hampshires. Source — New Hampshire Poultry Improvement Board Inc.

†*Farm Production*, 1949-50, Bureau of Agricultural Economics (B.A.E.), U.S.D.A.

Whether New Hampshire can maintain this superiority in technology through the years is not known, for every year competition becames greater from the different areas of the country which are producing their own strains of broiler birds. It is a primary requirement that the poultrymen in the state continue to improve their birds and to develop new strains to meet changes in market demand. One possibility, for example, is the crossing of a dominant white male with New Hampshires to obtain hybird vigor and white broilers.

Competing Areas

There are eight states outside the northeastern area which sent over a million pounds of dressed poultry meat to Boston in 1949. Five of these states, Nebraska, Minnesota, Iowa, Missouri, and Illinois, are midwestern; the remainder, Oregon, Utah, and California, are located in the Far West. There are also four states, Delaware, Maryland, South Carolina, and Georgia, which either have large broiler enterprises shipping to Boston or are in the process of developing a broiler industry that may very well ship to Boston in the near future.

Measures of Camparative Advantage

In comparing any advantages or disadvantages New Hampshire may have on the Boston market, it will be necessary to consider those factors which make up the conditions and costs of production up to the point of delivery on the market.

It is proposed to compare baby chick prices, farm wage rates, housing, farm prices, transportation rates, and feed prices.

1. BABY CHICK PRICES

The range for cross breed baby chick prices from 1947 to 1950 is from $13.54 per hundred in Missouri to $18.75 per hundred in California, with New Hampshire prices at $16.62 per hundred. Comparisons between cross breed chicks were used because they are the most common for broiler production, and mature cross breed hens are usually good egg producers.

Table 4. Average Price Per Hundred Cross Breed Baby Chicks, Straight Run, 1947-1950

State	September 1
Maine	$16.30
New Hampshire	16.62
Massachusetts	17.95
New York	17.88
Delaware	15.12
Maryland	15.37
South Carolina	15.25
Georgia	15.50
Minnesota	14.27
Iowa	14.50
Illinois	15.37
Missouri	13.54
Nebraska	14.05
Oregon	18.62
Utah	18.25
California	18.75

While the price range — $5.21 — is quite large, there is also a large range in the quality of chicks sold. Those chicks produced in the Northeast are usually from Pullorum Clean flocks and hatched in approved hatcheries, while the chicks from the other sections, notably the Midwest, are usually from Pullorum Passed or Tested flocks and hatcheries. Pullorum Clean flocks and hatcheries have long been a selling point for New Hampshire poultry producers. This position is being achieved by producers in other states, particularly those trying to establish a foothold in the broiler industry. Although their costs of production are also rising due to blood testing, the average price of chicks from these approved hatcheries is comparable to New Hampshire.

Pullorum Clean flocks must pass two consecutive annual tests with no reactors at either time. Hatcheries, to be titled as Approved, must hatch eggs only from United States Pullorum Clean flocks. These blood tests cost the producer five cents for every bird over five months of age on his farm plus an additional cent per bird for approval by the state inspector. This will cost the producer at least $60 per thousand birds tested every year

which helps to explain the higher price received for hatching eggs and baby chicks produced in the Northeast. There will be some variation of these costs between states.

Any advantage of one state over another in the price of baby chicks is hard to measure. Chicks coming from tested flocks, with good production records behind them, low mortality, and freedom from disease, are more expensive than those chicks which come from farm flocks. Chicks produced in the Northeast and Pacific Coast states are more expensive, but tend to have higher production, lower mortality, and a more uniform growth rate than chicks selling much cheaper from the South and Midwest.

2. FARM WAGE RATES

Wages are a large item in flocks of more than 3,000 birds. Flocks smaller than 3,000 birds can be handled by one man. There are two primary reasons for large differences in wage rates in different areas: the standard of living of farmers and the alternatives for labor in other fields. The rural South, in Georgia and South Carolina, has a lower standard of living, exemplified by a large rural population and little industry to attract the workers to factories. If industry continues to move South, southern agriculture may in time have to increase wage rates in order to hold labor on the farm. Cheap labor can also be substituted for machinery and expensive labor-saving devices which are more predominant in the North and West.

In the midwestern states, while labor prices are higher, the flocks are smaller and farm labor is used in other enterprises which have much greater returns, such as grain and livestock production. Small flocks receive neither the care nor special equipment given on commercial farms, so the initial outlay and labor expense is much lower. A flock of 200 layers would require only 20 or 30 minutes a day of the farmer's labor. The feed hoppers and waterers may be anything suitable to hold the day's feed and water requirements. Many of the farm flocks are raised by the women on the farm.

New Hampshire is among the higher wage rate areas.

Table 5. Farm Wage Rates Paid Per Hour And Per Day For 16 States in 1949 and 1950*

State	Per Hour		Per Day	
	1949	1950	1949	1950
Maine	$ .79	$ .75	$ 6.10	$ 5.90
New Hampshire	.87	.87	6.50	6.60
Massachusetts	.86	.85	6.70	6.60
New York	.86	.87	6.70	6.30
Delaware	.67	.67	6.15	5.60
Maryland	.70	.66	5.50	5.70
Minnesota	.93	.87	7.20	7.20
South Carolina	.36	.36	3.00	3.00
Georgia	.41	.42	3.20	3.05
Iowa	.94	.97	7.40	7.60
Illinois	.86	.85	6.30	6.40
Missouri	.97	.87	5.00	5.00
Nebraska	.92	.90	7.40	7.40
Oregon	.90	.87	7.90	7.30
Utah	.95	.95	6.50	6.80
California	.91	.81	8.10	6.90

*Source — *Labor Statistics*, B.A.E., U.S.D.A., September, 1949-50

The daily wage rates for farm labor vary as much as $4.60 among the areas competing on the Boston market. The southern states, including Missouri, have a definite advantage over the rest of the country, but the production returns per man unit are probably much lower in the cheap labor area than in the rest of the country where labor rates are higher.

The Midwest has the highest farm labor rates of any section of the country due to a scarcity of farm labor and competition for the existing supply. With small farm flocks and the small amount of labor required to maintain these flocks, other enterprises, such as grain or livestock, can absorb the small labor costs necessary for the farm flock. Commercial poultry enterprises, as distinct from farm flocks, would be at a disadvantage because poultry would have to compete with other types of agriculture for labor.

3. HOUSING

Housing facilities for poultry vary widely within New Hampshire. Old barns, factories, or sheds are readily convertible into poultry houses, usually with little added expense as long as the buildings can be made weatherproof. The construction of a new building again has a wide latitude in costs, depending on whether the producer builds his own or hires it built, whether he uses old or new lumber, and how the building is finished. The prices for typical new buildings may vary between 50 cents to over $1.50 per square foot.

Old factories have some advantages. Usually they are weatherproof and have some sort of heating arrangement which is useful, especially after the need for brooder heat passes.

The heating equipment also depends upon the individual producer. Large buildings may use a central heating unit with oil or automatic stoker to cut down labor requirements. Small buildings require individual brooder stoves in each pen which may be automatic if bottled gas, electricity, or oil is used. The greater the labor costs, the more advantageous it is for an automatic heating system.

Table 6. Comparative Costs of Building A Three-Story 36′ x 36′ Poultry House In Different Sections of the United States*

Wholesale Prices December 1948	
City	Aprox. Total
Atlanta	$1189.
Baltimore	1566.
Boston	1430.
Chicago	1466.
Cleveland	1290.
Dallas	1207.
Denver	1763.
Detroit	1397.
Kansas City	1822.
Los Angeles	1571.
Minneapolis	1879.
New York	1544.
Philadelphia	1688.
St. Louis	1585.
San Francisco	1263.
Seattle	1268.

*Source — *Engineering News Record*, December, 1948

All buildings used for poultry production incur some costs, even if only labor is involved in weatherproofing or making more efficient arrangement of pens and equipment. Many farms have buildings that can be converted into poultry houses or at least there are buildings in the neighborhood. New buildings are bound to be expensive with the high costs of building materials. The initial construction costs of new poultry buildings, while varying a good deal in different sections of the country, show small difference in cost over the length of the life of the building.

In the construction of a three-story 36′ x 36′ poultry house*, the

*Poultry Housing Series No. 2, University of New Hampshire Agricultural Extension Service.

cost may vary as much as a third in different parts of the country. If there were a thousand dollars difference in the construction costs, this would amount only to $66 a year over a period of 15 years. If the house were used for laying hens that averaged 50 percent production through the year, the thousand birds would lay 15,203 dozen eggs which would make the extra cost of the building .004 cents per dozen eggs. If the house were used for broilers, one could raise approximately 10,000 broilers or at least 25,000 pounds of meat. The house would then cost about .0022 cents per pound of meat.

The difference between housing costs in different parts of the country can be considered negligible if spread over a long period of time. The initial outlay, however, will require more capital in some areas than others. New England is one of the lower cost areas.

4. PRICES AT THE FARM

A comparison of prices paid at the farm between areas indicates the basic prices of raw material to which must be added processing, handling, and transportation charges. The farm prices for both eggs and poultry are lower in the Midwest than in the Northwest. The 1950 average prices of 16.6 cents per pound in Minnesota and 20.5 in Missouri compare with 24.3 in New Hampshire, 23.1 in Maine, and 24.4 in Maryland. Prices in California are higher than in New England, although in 1949 prices there were lower by 1.6 cents per pound. More than three and a half million pounds of poultry meat were shipped to Boston from the Pacific states.

If poultry can be bought at ten cents per pound less in the Midwest, the profitability of shipping to the East will depend on transportation and handling costs.

Table 7. Egg and Poultry Meat Prices In New Hampshire and Competing Areas, 1950*

(cents per pound and dozen)

State	Price per lb. Meat	Price per Doz. Eggs
Maine	23.1	40.2
New Hampshire	24.3	40.0
Massachusetts	24.8	44.0
Delaware	24.4	35.2
Maryland	24.4	32.8
South Carolina	25.9	39.1
Georgia	24.0	38.8
Iowa	17.5	25.7
Minnesota	16.6	26.0
Illinois	22.4	25.9
Missouri	20.5	25.9
Nebraska	22.9	25.9
Oregon	22.9	37.4
Utah	19.5	35.0
California	26.8	35.8

*Source — *Agricultural Prices,* B.A.E., U.S. D.A., 1950

5. TRANSPORTATION RATES

Transportation rates are one of the largest costs in the poultry industry, from the standpoint of both commercial feed and the marketing of the finished product. These charges are a part of the total production and marketing costs. They are important because they add to the retail prices for consumers, establish regions for production within the industry, and lessen the net returns of producers.

A. Rail Shipments

Approximately 70 percent of the poultrymen's production costs are for feed and about 15 percent of the feed cost in New England is for transportation. Rail rates for grain vary quite widely in shipment to different areas of the country. The rates are set up according to zones on long dis-

tance hauls. Competition between the various railroads also tends to keep the price a little lower on shipments West to East because historically, most of the manufactured goods have moved West, and in order to save empty cars from coming back without loads, grain is hauled at low rates. All points in New England are subject to the same railroad rates per 100 pounds of grain for shipments from the Midwest as are points West of the Rocky Mountains. Shipments to Boston or Bangor, Maine, for example, are sent at the same cost even though there is about 300 miles difference. The same is true on the West coast. Chicago is about 1,240 miles from Salt Lake City and 1,835 miles from San Francisco, but the transportation charges are the same.

Table 8. Freight Rates on Grain (Corn, Oats, and Wheat)
Minimum Weight 40,000 pounds
September 29, 1950*

To	From Chicago, Ill.	From Mankato, Minn.	From Des Moines, Iowa
Bangor, Me.	57.5	80.5	75.5
Boston, Mass.	57.5	80.5	75.5
Lawrence, Mass.	57.5	80.5	75.5
Concord, N. H.	57.5	80.5	75.5
Buffalo, N. Y.	45.5	70.5	61.5
Ithaca, N. Y.	50.0	73.0	68.0
Portland, Ore.	125.5	101.0	125.5
Snow Hill, Md.	57.5	80.5	75.5
Gainesville, Ga.	74.5	97.5	83.0
San Francisco, Calif.	125.5	101.0	125.5
Salt Lake City, Utah	125.5	101.0	125.5
Omaha, Nebr.	40.0	30.0	22.0
Minneapolis, Minn.	37.0	16.0	28.0
Des Moines, Iowa	31.5	28.0	
Chicago, Ill.		37.0	32.0
Harrisburg, Pa.	52.5	75.5	70.5
Wichita, Kans.	56.0	65.5	46.0
Austin, Texas	66.0	82.0	69.5

*Source — Transportation and Warehousing Branch, P.M.A.

In the Boston area New England has an advantage over the Pacific coast, Georgia, and Utah, but is less advantageously placed than the Midwest areas.

In terms of the Boston market, the Midwest has an advantage over the rest of the country, especially if they ever entered into broiler production on a large scale and used a maximum of home-grown or locally-produced feeds. It takes about three carloads of grain to produce one carload of broiler meat, assuming a three-pound broiler was raised on 12 pounds of feed. This means that it would cost a broiler producer in Maine about $690 to receive three carloads of grain at 40,000 pounds a carload. Each carload would produce about 10,000 pounds of dressed broiler meat. A broiler producer in California would be at a much greater disadvantage since it would cost him $1,506 for three carloads of grain, plus $1,053 to ship 30,000 pounds of broiler meat to Boston. A broiler producer in the Midwest would have to pay the transportation charges on 30,000 pounds of broiler meat to Boston which would be $318, half as expensive as the Maine producer and a fifth as expensive as the California producer.

It is safe to assume that if the Midwest entered the broiler industry, it could do so at a great advantage over the rest of the country. But as long as the present alternatives in the Midwest offer higher returns than poultry, then broilers will not be produced on a large scale. How long this condition will exist depends on the marginal returns from these other enterprises and if poultry meat prices remain favorable. Operators on poorer land in midwestern states may prefer to substitute capital for land and the poultry industry offers this opportunity as it has in New England.

LIVE POULTRY

For live poultry shipments railroad cars are privately owned by an operating company and the rental charge is about $75 from the Midwest to Boston and $100 per car from the Southwest to Boston in addition to the railroad charge for transporting the cars. Live birds shipped to market from local areas by truck can be delivered in a number of hours. While shrinkage occurs, the birds do not have to be fed enroute and can be crowded closer together. The advantage lies with local producers.

DRESSED POULTRY

Dressed or eviscerated birds shipped to market in refrigerator cars constitute a large saving in money and weight because of the number (usually thirty to forty thousand pounds) shipped in one car and the elimination of shipping waste materials.

Table 9. Freight Rates on Dressed Poultry
Minimum Weight 30,000 lbs.
Cents per 100 lbs.
To Boston, Mass.*

From	Rate
Portland, Ore.	351
San Francisco, Calif.	351
Los Angeles, Calif.	351
Salt Lake City, Utah	308
Omaha, Nebr.	154
Minneapolis, Minn.	145
Des Moines, Iowa	140
Chicago, Ill.	106
New York, N. Y.	58
Philadelphia, Pa.	63
Baltimore, Md.	72
Wichita, Kans.	180
Austin, Texas	358†
Gainesville, Ga.	186

*Source — Transportation and Warehousing Branch, P.M.A.

†Minimum weight 20,000 pounds.

With a saving of up to 38 percent in transportation costs on dressed and eviscerated birds, *poultry meat coming to Boston from outside the New England area can compete on a price basis with live New Hampshire birds.* It also allows the Midwest to ship eviscerated birds by rail at a lower cost than for grain needed to produce an equal amount of meat in the East.

In 1949, Oregon, California, Utah, Nebraska, Minnesota, Iowa, Illinois, and Maryland each sent over a million pounds of dressed poultry to Boston. This means that of the areas producing enough for export, the states with the higher transportation costs must either produce more efficiently or sell a superior product, in order to compensate for the differences in transportation rates.

The Midwest, with lower transportation rates to Boston and New York than the Far West, sells more cheaply and has a less specialized investment in poultry. Under the present situation with the high prices for grain, beef, and hogs, it is more advantageous for the midwestern farmers to produce these, rather than poultry, thus giving the far western producers less competition. The Far West could not compete on the eastern markets with

the Midwest and would be forced to find new markets for their poultry products.

B. Truck Shipments

The Boston market receives about 43 percent of the dressed poultry and all of the live poultry by truck. Table 10 shows a breakdown between the various sections of the country and the percentage sent to the Boston market by truck.

Table 10. Percent Truck Receipts Of Total Poultry Receipts at Boston, 1949*

Source	Percent of total receipts by truck	Total percent of Boston receipts
New England	98.37	34.67
North Atlantic	82.43	8.21
Midwest and Southern	7.89	37.92
Far West	3.31	19.18

*Dairy and Poultry Statistics, P.M.A., 1950

6. FEED PRICES

Commercial poultry feed prices varied as much as a dollar a hundred pounds over the United States in June, 1950. Wisconsin had the lowest price for laying mash, $4.30 per hundredweight, while Florida and Alabama had the highest price of $5.30 per hundredweight. Differences in the price of poultry mash are not due to erratic elements in the marketing system. The prices paid farmers in the various states are directly associated with the transportation charge from the grain supply areas, the grade and mix of the mash purchased, and the efficiency of the distributing agency. Therefore, there is a strong tendency for the price differentials between states to remain fixed.

The price of scratch feeds varies in the same manner as the mash feeds. In 1949, Kansas had a price of $3.65 per hundredweight, while the price in Montana was $4.80. New Hampshire in both cases was pretty much in the middle, with mash selling at $4.40 and scratch grain at $4.10. Many of the poultry producers in the grain belt can produce their own scratch feed at a rate much lower than the commercial price, charging themselves only the going price for grain at the farm. Assuming poultry producers in both Kansas and Montana produced their own scratch feed at a three-part corn to one-part oats, Kansas producers in 1950 would charge themselves $2.48 per hundred pounds and Montana producers $2.68. If poultrymen in both these states were feeding a one-to-one ratio of mash and scratch and were buying all their feed commercially, it would cost $4.00 per hundred pounds in Kansas and $4.85 in Montana. But if they raised their own scratch feed, the costs would drop to $3.43 and $3.81 respectively, about a 14 percent saving in Kansas and more than a 25 percent saving in Montana.

In most farm flocks throughout the Midwest, producers feed about one-fourth commercial feeds and concentrates. The rest of the feed requirements are either home- or locally-grown grains. Prices in the Midwest tend to run 10 to 15 cents per hundred pounds lower than New Hampshire with most of the prices elsewhere equal or greater.

The Northeast and Far West both raise very little grain and must import from the grain producing areas. Quoted prices for commercial feeds show that these areas are at a disadvantage in the largest item in the cost of production of poultry products.

There is one advantage of the Northeast which the relative prices of feeds do not disclose. Even though the midwestern farms do produce much of their feed, their poultry production and growth rates are lower. This may be due to an unbalanced diet. Commercial feeds, while costing

much more, give the hens a good diet so that production is higher. Most feed companies produce several types of feed for different types of jobs, such as chick starter, growing mash, high energy feeds, laying mash, and breeding mash. Each of these types is made for a specific job and sells at different prices. The high energy mash is usually the most expensive because of the supplements added to it, but it produces exceptionally rapid broiler growth. If broilers can be produced in less time, at heavier weights, and at less cost per pound with this type of mash, it is more economic to use the higher priced feed. Likewise breeder mash is more expensive, but when the producer can get higher fertility and hatchability with its use, the extra cost also may be economically justified.

Table 11. Commercial Poultry Feed Prices Per 100 Pounds, 1950*

State	Mash	Scratch
Maine	$ 4.65	$ 4.25
New Hampshire	4.45	4.15
Massachusetts	4.50	4.15
New York	4.45	3.95
Delaware	4.45	4.20
Maryland	4.65	4.10
South Carolina	5.15	4.55
Georgia	5.10	4.50
Iowa	4.60	4.15
Minnesota	4.35	3.95
Illinois	4.70	4.25
Missouri	4.30	3.75
Nebraska	4.35	3.85
Oregon	4.75	4.15
Utah	4.25	3.70
California	4.75	4.20

*Source — *Agricultural Prices*, B.A.E., U.S.D.A.

Summary

New Hampshire provides about 15 percent of poultry meat receipts on the Boston market. The proximity of this market allows producers an advantage in shipping live poultry, but the marketing of dressed birds runs into competition from areas all over the United States.

In examining the major costs of production and marketing in these competitive supply areas, the following characteristics were revealed:

1. Baby chick prices are highest in the northeastern and western states and lowest in the Midwest. Price disadvantages for New Hampshire chicks, however, may be modified by quality considerations, and the Pullorum Clean flocks of the Northeast have higher production rates, lower mortality, and more uniform growth rates than lower priced chicks from the Midwest and South.

2. Farm wage rates are lowest in the South and highest in the Midwest. The influence of farm wage rates must depend on the degree to which labor is hired. Laying flocks of more than 3000 birds usually require additional help and New Hampshire specialized poultry farms are commonly in this category, placing them at a disadvantage. The farm flocks of the Midwest are operated as part of the total farm operation and generally make little use of hired labor. The lower wage rates in the South would place them at an advantage, if labor productivity were the same as in other areas.

3. There is great variation in housing construction costs, with the Midwest being high in comparison with other areas. If the cost of building is amortized over its life period, the difference between areas is negligible per pound of meat or per dozen eggs produced.

4. The farm price at which birds can be bought by processors is a reflection of costs of production. Farm prices per pound of poultry meat are generally higher in the Northeast, California, and the South than in the Midwest and Northwest by as much as 10 cents per pound.

5. Producers located close to the Boston market have an advantage in shipping live poultry to Boston because of transportation charges and shrinkage. The Midwest can ship eviscerated birds to Boston at a lower cost than the cost to ship the grain equivalent for production in New England. The alternative production opportunities in the Midwest, however, are retarding an immediate expansion of the poultry industry to specialized commercial flocks, thus reducing the competition for the eastern markets.

6. The prices of commercial feed are relatively uniform through the country. The use of these feeds, however, is more predominant in the grain-deficit areas than in the grain-producing areas. In the latter, much of the poultry feed is grown on the owner's farm or purchased locally and mixed by the producer. This gives them an apparent price advantage. The commercial feeds and specialized feeding methods available in the deficit areas enable producers to feed to heavier weight in less time at reduced cost per pound and also maintain higher fertility and hatchability. This tends to counteract some of the advantages obtained by the proximity of grain supplies.

7. An index of the relative advantages of states shipping poultry to the Boston market is given in Fig. 1. The states with the highest numbers, Nebraska, Illinois, Indiana, and Ohio, have the greatest advantage followed by other states in decreasing order.

Those states which produce most of their own feed are assumed to use corn, oats, and wheat in a 1:1:1 ratio to arrive at the average cost of a hundred pounds of this mixture at farm prices paid in September, 1950. In those states which do not raise their own feed, New York, Pennsylvania, Maryland, and Delaware, the average price of commercial feed and commercial scratch was averaged.

The Midwest presents a solid block of states with advantages in the production of poultry meat for delivery to Boston. This is followed by New Hampshire and the southern states of South Carolina and Georgia which have an advantage not yet fully developed. The Del-Mar-Va area has less advantage than New Hampshire on this market.

Figure 1 - ESTIMATED RATINGS (R) OF COMPARATIVE ADVANTAGES OF SELECTED STATES COMPETING ON THE BOSTON MARKET
SEPTEMBER 1950 PRICE LEVELS